

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1-6 (Canceled)

Claim 7 (Currently Amended)

A reinforced composite material manufactured by filling with a resin, a ceramic or a metal the empty space of ~~[[the]]~~ a three-dimensional wire-woven truss-type cellular light structure according to claim 1 formed of six groups of orientational-continuous-wires intercrossed with each other at angles of 60 degrees or 120 degrees in a three-dimensional space, the cellular light structure comprising a plurality of unit cells, each unit cell of the cellular light structure comprising:

a) a first regular tetrahedron member formed of first to sixth wires, the first regular tetrahedron member being constructed in such a manner that the first wire, the second wire, and the third wire are intercrossed in a plane, the fourth wire is intercrossed with the intersection point of the second wire and the third wire, the fifth wire is intercrossed with the intersection point of the first wire and the second wire, and the sixth wire is intercrossed with the intersection point of the third wire and the first wire, the fourth wire, the fifth wire, and the sixth wire being intercrossed with one another at a single reference intersection point, each side of the first regular tetrahedron member being equilateral; and

b) a second regular tetrahedron member contacting the first regular tetrahedron member at the reference intersection point and having a similar shape to the first regular tetrahedron member, the second regular tetrahedron member being constructed in such a manner that the fourth wire, the fifth wire, and the sixth wire pass the reference intersection point and extend further, each of a group of three wires being intercrossed with one wire selected from the extended fourth, fifth and sixth wires and with another wire of the group of three wires so that each side of the second regular tetrahedron member is equilateral, the group of three wires being parallel to the first wire, the second wire, and the third wire respectively;

c) wherein the wires are intercrossed with each other at 60 degrees or 120 degrees, each of the wires being curved in a first direction at a first intersection with a first group of two other wires and being curved in a second direction, which is opposite to the first direction, at a second intersection with a second group of two other wires, the second intersection being adjacent to the first intersection, the unit cell being repeated to form the plurality of unit cells in a three-dimensional pattern.

Claim 8 (Previously Presented)

A reinforced composite material manufactured by filling with a resin, a ceramic or a metal the empty space of a smaller regular tetrahedron member among the first and second regular tetrahedron members, which constitutes a unit cell of a three-dimensional wire-woven truss-type cellular light structure formed of six groups of orientational-continuous-wires intercrossed with each other at angles of 60 degrees or 120 degrees in a three-dimensional space, a unit cell of the cellular light structure comprising:

a) a first regular tetrahedron member formed of first to sixth wires, the first regular tetrahedron member being constructed in such a manner that the first wire, the second wire, and the third wire are intercrossed in a plane, the fourth wire is intercrossed with the intersection point of the second wire and the third wire, the fifth wire is intercrossed with the intersection point of the first wire and the second wire, and the sixth wire is intercrossed with the intersection point of the third wire and the first wire, the fourth wire, the fifth wire, and the sixth wire being intercrossed with one another at a single reference intersection point, each side of the first regular tetrahedron member being equilateral; and

b) a second regular tetrahedron member contacting the first regular tetrahedron member at the reference intersection point and having a similar shape to the first regular tetrahedron member, the second regular tetrahedron member being constructed in such a manner that the fourth wire, the fifth wire, and the sixth wire pass the reference intersection point and extend further, each of a group of three wires being intercrossed with one wire selected from the extended fourth, fifth and sixth wires and with another wire of the group of three wires so that

each side of the second regular tetrahedron member is equilateral, the group of three wires being parallel to the first wire, the second wire, and the third wire respectively;

c) wherein the wires are intercrossed with each other at 60 degrees or 120 degrees, and the unit cell is repeated in a three-dimensional pattern; and

d) wherein the first and second regular tetrahedron members have a ratio of similarity in the range of 1:1 to 1:10.

Claim 9-14 (Canceled).

Claim 15 (Currently Amended)

A method of manufacturing a reinforced composite material by filling with a resin, a ceramic or a metal the empty space of a three-dimensional wire-woven truss-type cellular light structure formed of six groups of orientational-continuous-wires intercrossed with each other at angles of 60 degrees or 120 degrees in a three-dimensional space manufactured according to [[the]] a method of ~~claim 9~~ comprising steps of:

a) forming an equilateral triangle by intercrossing a first wire, a second wire, and a third wire in a plane;

b) forming a first regular tetrahedron member by intercrossing a fourth wire with the second wire and the third wire, intercrossing a fifth wire with the first wire and the second wire, intercrossing a sixth wire with the third wire and the first wire, and intercrossing the fourth wire, the fifth wire, and the sixth wire at a single reference intersection point, each side of the first regular tetrahedron member being equilateral;

c) forming a second regular tetrahedron member contacting the first regular tetrahedron member at the reference intersection point and having a similar shape to the first regular tetrahedron member by passing and extending the fourth wire, the fifth wire, and the sixth wire through the reference intersection point, and intercrossing each of a group of three wires with one wire selected from the extended fourth, fifth and sixth wires and with another wire of the group of three wires so that each side of the second regular tetrahedron member is equilateral, the group of three wires being parallel to the first wire, the second wire, and the third wire respectively; and

d) repeatedly forming the first and second regular tetrahedron member to thereby form the cellular light structure wherein each of the wires is curved in a first direction at a first intersection with a first group of two other wires and is curved in a second direction, which is opposite to the first direction, at a second intersection with a second group of two other wires, the second intersection being adjacent to the first intersection.

Claim 16 (Previously Presented)

A method of manufacturing a reinforced composite material by filling with a resin, a ceramic or a metal the empty space of a smaller regular tetrahedron member among first and second regular tetrahedron members, which constitutes a unit cell of a three-dimensional wire-woven truss-type cellular light structure, formed of six groups of orientational-continuous-wires intercrossed with each other at angles of 60 degrees or 120 degrees in a three-dimensional space, fabricated by a method comprising steps of:

a) forming an equilateral triangle by intercrossing a first wire, a second wire, and a third wire in a plane;

b) forming a first regular tetrahedron member by intercrossing a fourth wire with the second wire and the third wire, intercrossing a fifth wire with the first wire and the second wire, intercrossing a sixth wire with the third wire and the first wire, and intercrossing the fourth wire, the fifth wire, and the sixth wire at a single reference intersection point, each side of the first regular tetrahedron member being equilateral;

c) forming a second regular tetrahedron member contacting the first regular tetrahedron member at the reference intersection point and having a similar shape to the first regular tetrahedron member by passing and extending the fourth wire, the fifth wire, and the sixth wire through the reference intersection point, and intercrossing each of a group of three wires with one wire selected from the extended fourth, fifth and sixth wires and with another wire of the group of three wires so that each side of the second regular tetrahedron member is equilateral, the group of three wires being parallel to the first wire, the second wire, and the third wire respectively; and

d) repeatedly forming the first and second regular tetrahedron member to thereby form a truss-type structure;

wherein the first and second regular tetrahedron members have a ratio of similarity in the range of 1:1 to 1:10.